

Challenges with Building the Longest Suspension Bridge in South America - Overview of Issues – The Owner's Perspective

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Abstract

The Chacao Bridge is the first major bridge project in Chile, and when built it will be the largest suspension bridge in South America. The 2,750 m-long structure will connect the island of Chiloé with mainland Chile across the Chacao Channel. The three-tower suspension bridge will have main spans over 1 km in length each. The design faces many challenges related to the environment where the bridge is located; high seismicity, high wind, volcanos, tsunamis, sea waves, and potential erosion of the central island (Roca Remolinos) and the shores.

This paper presents the design and construction challenges for the project from the Owner's perspective. Also, it discusses the interaction within the project team: owner (MOP), owner's engineer (RyQ and COWI NA) and the construction JV working together for successful delivery of this high profile project.

Keywords: Owner perspective, design, bidding process, suspension bridge.

1 Introduction

The Ministry of Public Works of Chile (MOP) includes several entities responsible for the administration of the country's infrastructure, such as airports, ports, hydraulic works, tunnels, bridges, among others. Each of these entities set the rules for the development of biddings processes. In particular, the Chilean Highway Authority is responsible for the planning, design,

construction, repair and replacement of roads and bridges, among others.

The projects managed by MOP are classified within the context of a traditional work, i.e. where the structure type, processes, and required professional qualifications are already established. However, when faced with non-traditional works, an assessment of the applicability of the current protocols is done.